

* SWBAT solve word problems using $F=ma$

Sep 6-2:31 PM

Welcome!!!

SECA Physics
Friday 30 October 2015

* Pick up: **H. Leslie Grebe**

- slip of paper (for later)
- notebook
- whiteboard, marker, eraser

Centering...

Opening Question:

What **CAUSES** something to accelerate???

Newton's 2nd Law

<https://www.youtube.com/watch?v=NYVMlmL0BPQ>



Sep 7-7:04 AM

Notes on video: **NEWTON'S LAWS OF MOTION & FORCES**

FORCES CAUSE MOTION

REMOVING:

- AIR PRESSURE
- FRICTION
- GRAVITY

⇒ NO FORCES

1) APPLE STAYED STILL OR STAYED MOVING

Newton's 3 LAWS OF MOTION

- USED FOR TRAINS, CARS, SPACESHIPS

FORCES CAUSE ACCELERATION

HOW MUCH ACCELERATION?

2ND LAW: $F = m \cdot a$

FORCE EQUALS MASS TIMES ACCELERATION

EX 1: 2 BLOCKS - SAME MASS

2X FORCE MADE 2X ACCELERATION

EX 2: SAME STRONG PUSH

HEAVIEST → LESS ACCELERATION

HEAVY → MORE ACCELERATION

MASS

$F = m \cdot a$

$W = m \cdot g$

ACCELERATION DUE TO GRAVITY

FORCE DUE TO GRAVITY

EX 3: SAME ACCELERATION = GRAVITY

AIR RESISTANCE MAKES A SMALL NET FORCE ON THE FEATHER

Oct 30-8:20 AM

Newton's 2nd Law:

MORE MASS → LESS ACC.
MORE FORCE → MORE ACC.

→ $F = m a$

FORCE = MASS · ACCELERATION

$$\frac{F}{m \cdot a}$$

$1 \text{ N} = \frac{\text{kg} \cdot \text{m}}{\text{s}^2}$

Practice:

A 2 kg ball is accelerated at 3 m/s/s. What is the force accelerating it?

If I push with 10 N of force on a 5 kg block, what will its acceleration be?

A 1 N force accelerates a toy car 2 m/s/s. What is the mass of the car?

Oct 26-7:31 AM

MAKE UP YOUR OWN...

$$F = m a$$



Oct 24-7:50 AM

Practice Problems

- * Work alone or with a partner
- * Make sure you understand the first 4 problems (for sure)
- * If you've got those, pick out a couple challenge problems that look do-able. Check with others to see what they got.

Oct 27-7:25 AM

Daily 3 Questions

- * Every day except test/project days
- * 3 Questions on the topics of the day
- * Main source of daily points
- * I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your **NAME!!!**

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1. Newton figured out the math equation that says _____ equals mass times acceleration.

- A. Inertia
- B. Velocity
- C. Force

2. The "equation triangle" for that equation is:

3. A 2 kg object is accelerated at 3 m/s/s: What is the force accelerating it?

Oct 8-6:48 AM